Health Literacy and Education

Susan J. Shaw, PhD
Department of Anthropology
University of Arizona

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- Co-authors:
  - James Vivian, PhD, University of Hartford, Data Analyst
  - Cristina Huebner, MA, Caring Health Center, Project Director
  - University of Arizona, Research Assistants: Julie Armin, ABD, Department of Anthropology, Research Assistant, Victor Reyes, Fayana Richards
  - Caring Health Center Outreach Interviewers: Ana Vargas, Jeffrey Markham, Phuong Do
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Education and health: Pathways

1. Health knowledge and behaviors (health literacy)
2. Employment, income
3. Social and psychological factors
   - Sense of control
   - Social standing
   - Social support

Source: RWJF Commission to Build a Healthier America, Sept. 2009

Overview

1. Culture: Two definitions
2. Contributions of qualitative, ethnographic research methods
3. Language, income, health literacy
4. Education and health literacy
5. How do cultural beliefs affect health behaviors and health literacy?
6. Conclusions

Culture: Two definitions

- “the integrated pattern of human behavior that includes actions, communication, beliefs, values and institutions” (NCCC 2001)
- Learned patterns of thought (knowledge) and behavior shared by a social group and acquired through acculturation

“There is no culture-free way to think about disease”

…

including the culture of science

Theoretical approach

- Political economy of health
- Culture as **meaning**:
  - Changes over time (e.g., slang, sagging, gender norms)
  - Permeable boundaries
  - Multiple, contradictory and overlapping
- Culture as **practice**: exploring cultural differences by looking at everyday behavior

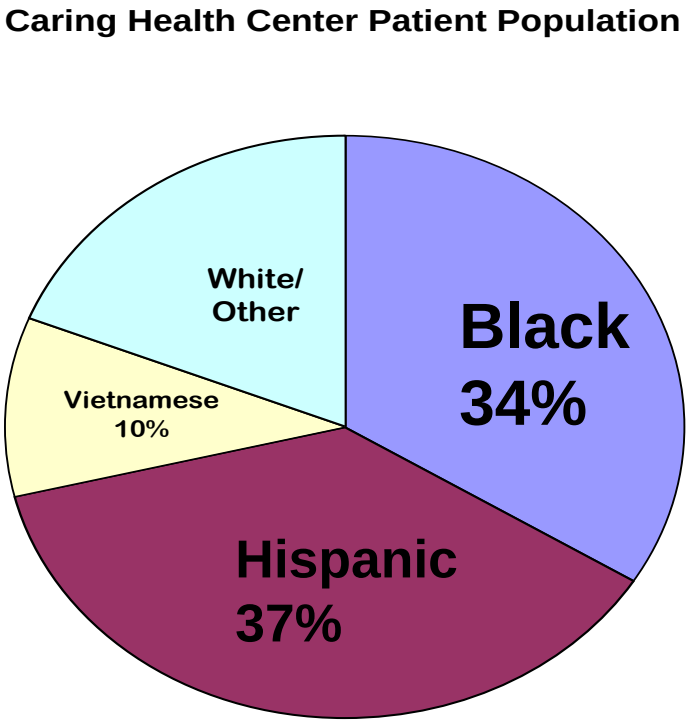
Explanatory models of illness

The “emic,” culturally informed understandings of

- **causes** and **treatments** of illness
- the role of patients, healers, and family members in caring for illness
- meaning of suffering and death

Research site: Caring Health Center, Springfield, MA

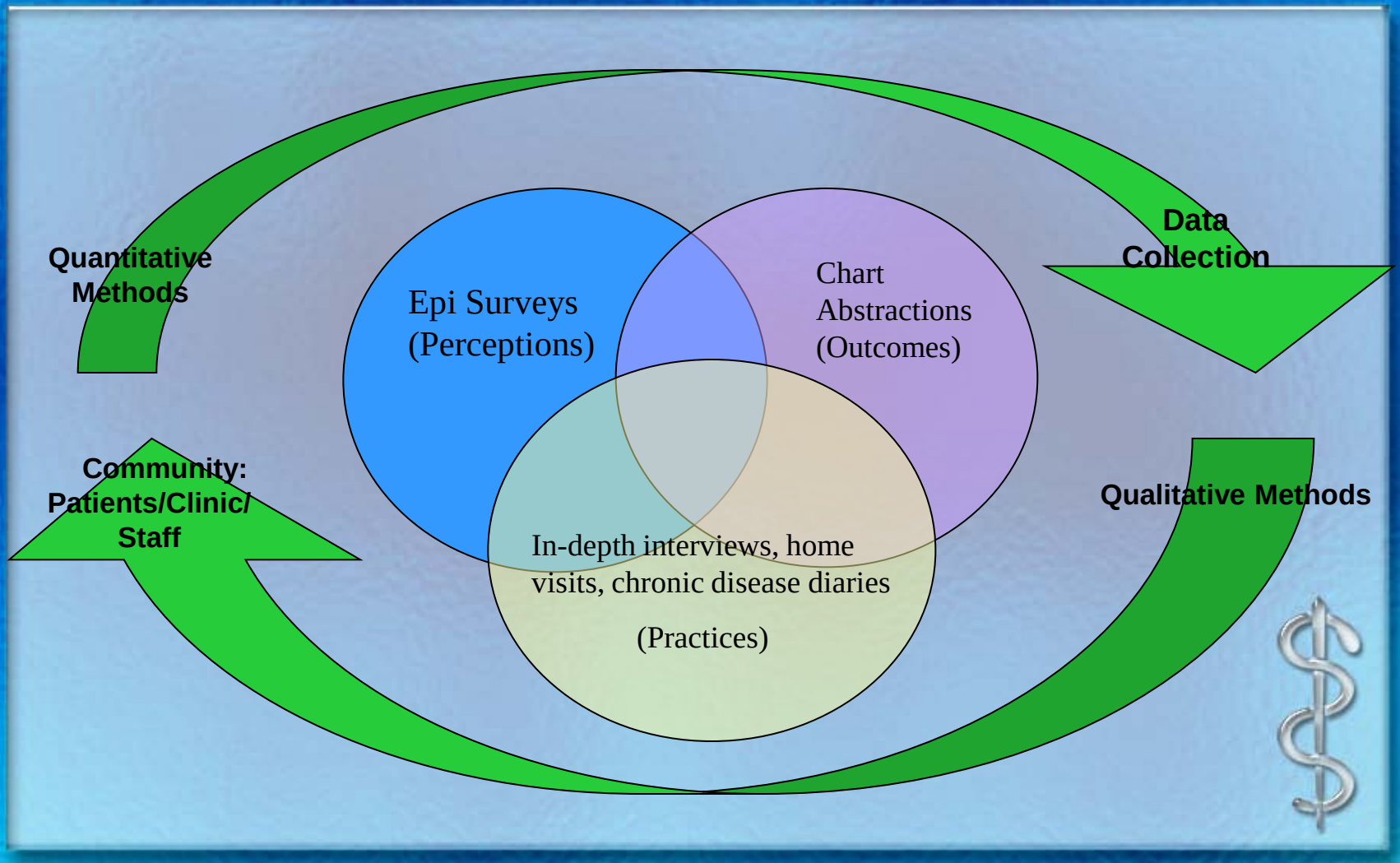
- Section 330 community health center
- Medically underserved, refugee resettlement area
- >50% of CHC's adult patients require translation services



Multi-method research

- Community-based research
- Longitudinal survey with 291 patients from 4 ethnic groups
  - African-American, Latino, Vietnamese, white
  - Administered orally by bilingual/bicultural interviewers
- Chart Abstraction at baseline, 12 mos
- Formative focus groups for instrument development
- In-depth interviews (n=30)
- Home visits (n=8)
- Chronic disease diaries (n=9)

Methods


Quantitative Methods
Data Collection
Epi Surveys (Perceptions)
Chart Abstractions (Outcomes)
Community: Patients/Clinic/ Staff
Qualitative Methods
In-depth interviews, home visits, chronic disease diaries
(Practices)

Qualitative Data Collection

1. Formative Focus groups (n=9)
2. In-depth Interviews (n=30)
3. Chronic Disease Daily Diaries (n=9)
4. Home Observations (food shopping, meal preparation, access to safe space for physical activity) (n=8)

Instrument Development

- We adapted existing health literacy scales for use in four ethnic groups (African-American, white, Latino, and Vietnamese) by:
  - translating TOFHLA into Vietnamese and pre-testing w/ members of target population
  - conducting follow-up focus groups to explore comprehension, reactions and incorrect responses to scales

Instrument Development, cont.

We matched health literacy scales to participants' language of choice:

- Wave 1: **All** participants completed the TOFHLA (Test of Functional Health Literacy in Adults) numeracy scale, and:
  - Latinos completed the SAHLSA (Short Assessment of Health Literacy for Spanish-speaking Adults)
  - English-speakers (White and Black) completed the REALM (Rapid Estimate of Adult Literacy in Medicine)
- Wave 2: We added the complete TOFHLA reading comprehension scale, translating it into Vietnamese and administering English, Spanish and Vietnamese versions of the entire TOFHLA short form. (We did not repeat the SAHLSA and REALM.)

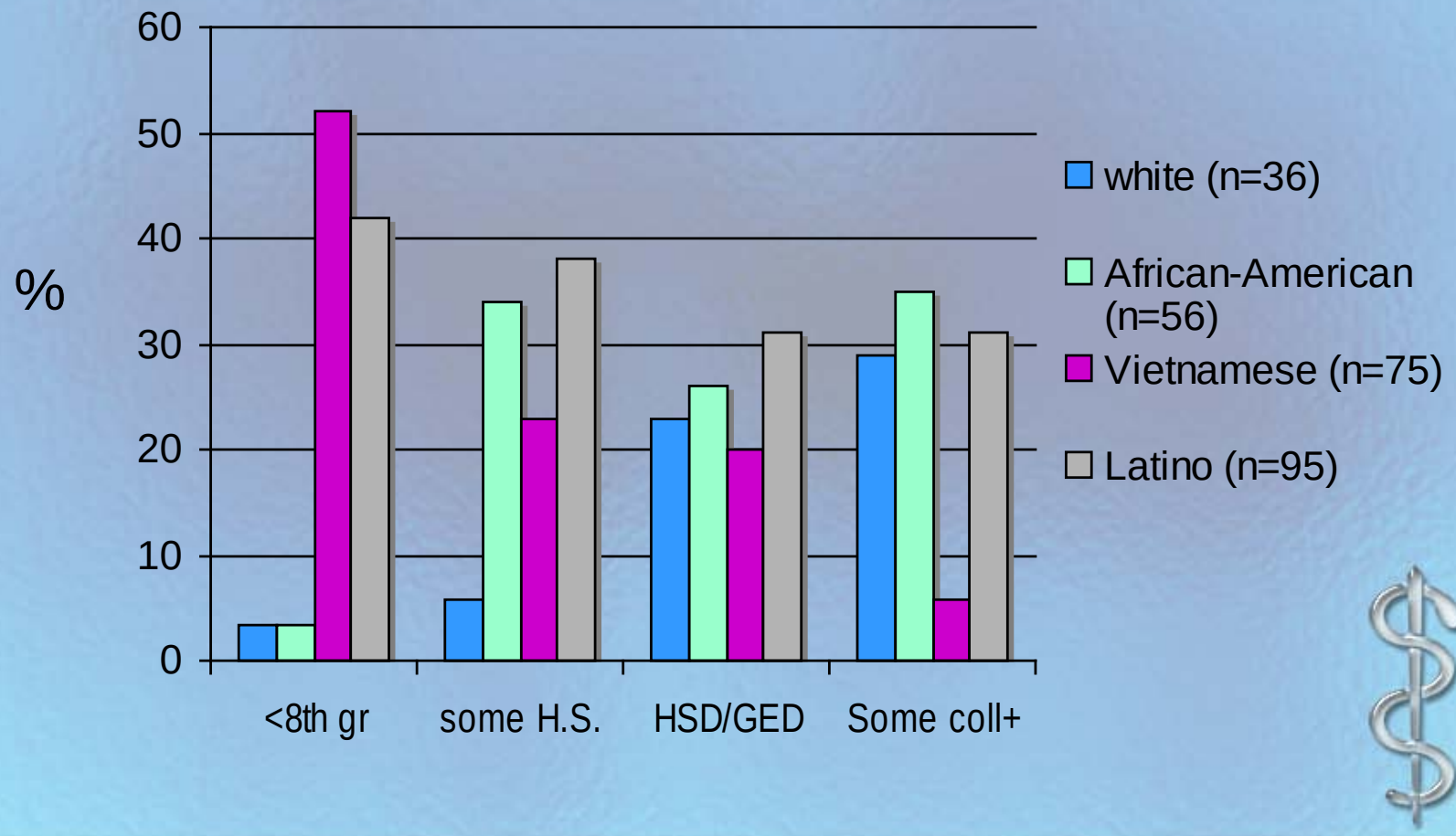
• NB: The TOFHLA has not been normed or validated in Vietnamese

Sample Overview

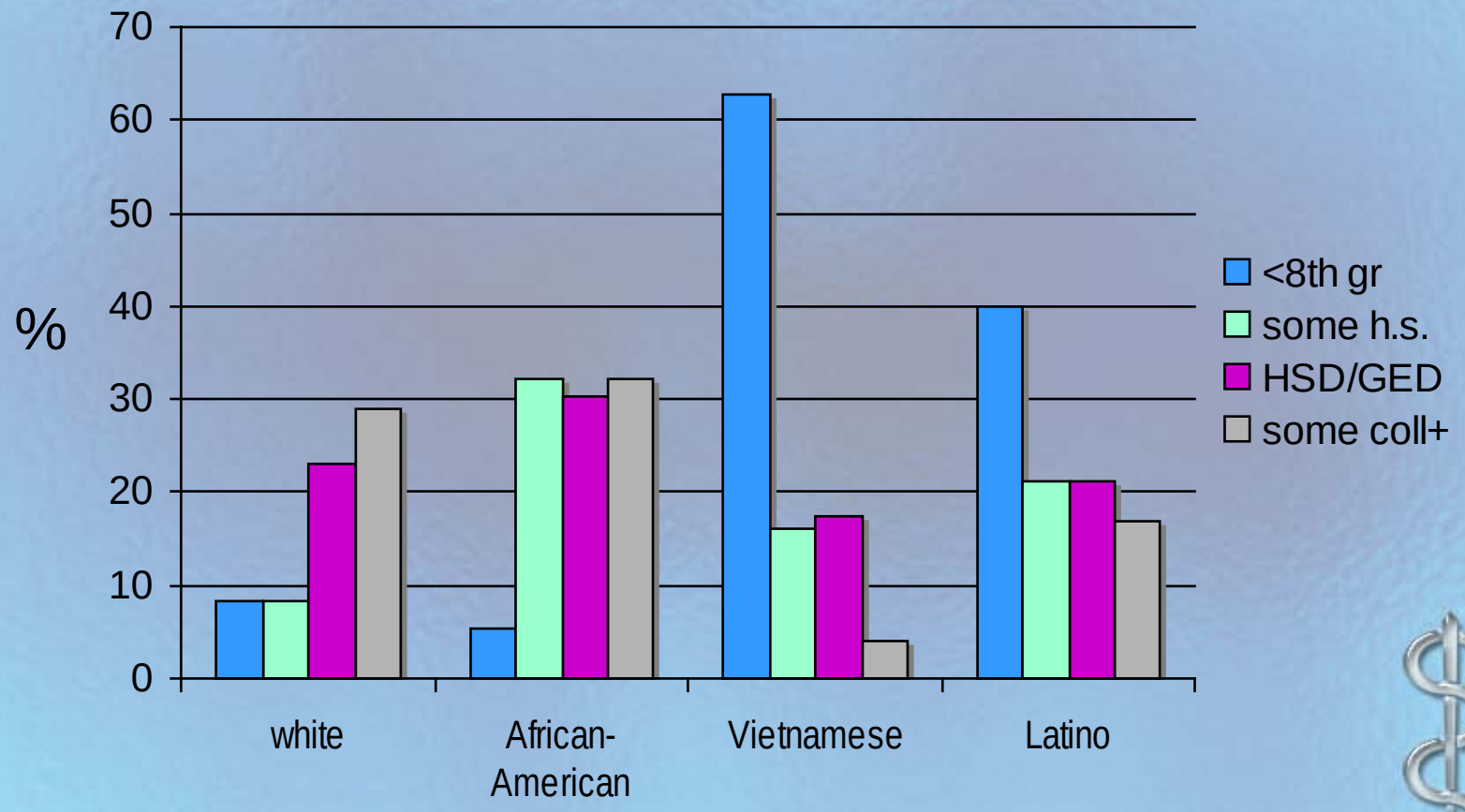
- 83% of Latino (PR) participants speak Spanish at home
- 100% of Vietnamese participants speak Vietnamese or other SE Asian languages at home
- 34% of all participants had ≤8th grade education
- 67% rated their health as fair to poor
- 59% are disabled
- 74% estimate their **household** income to be less than $1,200/mo

N=291	white	African-American	Vietna-mese	Latino
Male	25	34	40	49
Female	15	30	47	51
Total	40	64	87	100

Education by ethnicity



Ethnicity by education



Language, income & health literacy

TOFHLA score is positively, but not consistently, correlated with:

- Fluency in English
- Income

Consider self fluent in English		
	Yes	No
Numeracy X	11.57	9.33
Inadequate	15.4%	52.9%
Marginal	3.8%	20.0%
Adequate	80.8%	27.1%

Income and TOFHLA [p<.001]		
Monthly HH inc	Inadequate	Adequate
<$800/mo.	60%	40%
$800+	40%	58%

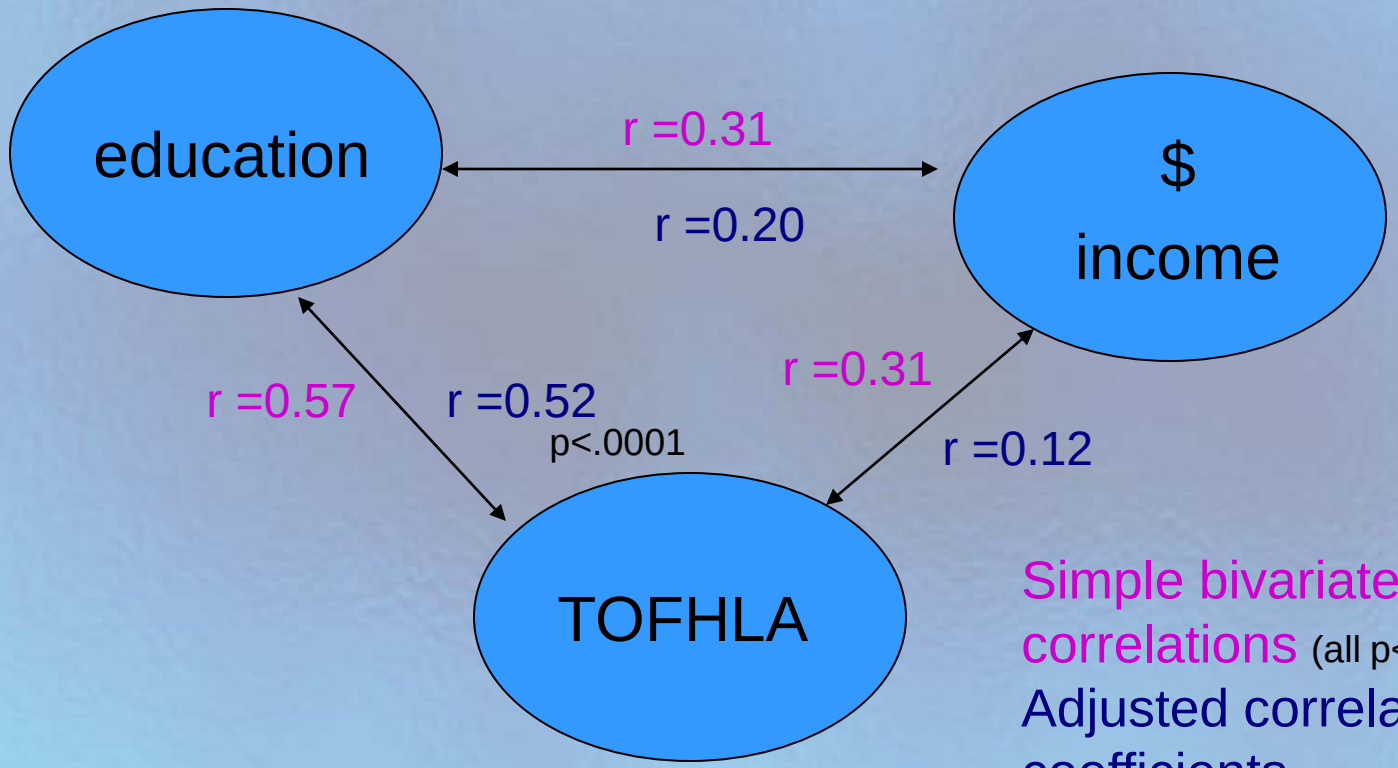
Education and health literacy

Correlations between years of education and health literacy

	TOFHLA	REALM	SAHLSA
White (n=40)	.36*	.48**	n/a
Af-Am (n=64)	.34**	.40**	n/a
Vietnamese (n=87)	.64**	n/a	n/a
Latino (n=99)	.47**	.28 (n.s.)	.42**
Total	.57** n=289	.41** n=119	.42** n=85

*p<.05; **p<.01

Education trumps income in HL



Simple bivariate correlations (all p<.0001)

Adjusted correlation coefficients

Personal experience or abstract reasoning? . . .

Patients tend to substitute personal experience in place of abstract examples in TOFHLA:

Interviewer (in Spanish): So, this is a card that says, “the normal blood glucose level is between 60-150.”

Participant 3 (in English): That’s incorrect.

Interviewer (in Spanish): And below it says, “today your level is 160.”

P3: That’s incorrect.

Interviewer: If this was your result, would it be within the normal range?

P1: No… incorrect.

Interviewer: And why?

P1: Because as I understand it is from 80 to 120.

P3 (interrupting P1): It’s up to 132.

P1: And here it says 160 which is too much. If someone has 160 they need to inject a little bit of insulin. At least 1mg or 2.

P3: Or take a pill. *~From a Latino focus group*

…Challenges in measuring health literacy

Q:...So this first one...you see the card there, card one? It says, 'if your blood sugar today is 160 would your blood sugar be normal today? ....

P1: I'd say, No! My, my blood sugar usually don't be 150 and you know... It be under that, 120, or something, uh, 138... So it can go up and down,

Q: It's usually about what, you said?

P1: One-, one- no higher than 138.

Q: Okay.

P2: Me, I probably would be normal and I got high blood sugar, so I... have a problem with that. (cont.)

(from an African-American focus group)

Q: So what would your answer be to this one, you were saying?

P2: I'd put say um... It would be normal.

Q: It would be normal. And your reasoning behind that you said, was because your…

P2: Yeah, I uh, I have high blood sugar and when I first went to Caring Health, I started going there in '95, and the doctor there told me, well actually mine was around 80, 90 to 170....That's always been kinda normal for me, ever since I had it's been, high and, high and low, like this morning I woke up and took my blood sugar, Ooh, it's 220. That was at 9:00 this morning!

Cultural variation in measurement techniques

- One Vietnamese participant kept saying, “I’m too old” and “I don’t know.” The patient seemed willing to try but seemed upset when she was unable to understand the question. The patient seemed to feel uneasy.
- Another participant, confronted with the TOFHLA reading comprehension, reported that she didn’t want to read. When the interviewer explained the process the patient was reluctant to go get her eyeglasses. She stated she doesn’t remember having to do this the previous year (when only TOFHLA numeracy section was administered in Vietnamese). *-From survey fieldnotes*

Numeracy, literacy

A: Yeah. …I used to take 20[mg] then at one point, they jumped it up to 40, then they jumped it back down to 20.
Q: Do you know why that happened?

A: Yes I do! Uh, six months before I was released, I said, ‘well, something’s wrong here.’ I said, ‘well, I gotta do somethin’, my cholesterol’s gettin’ high. I don’t want to take 40 mg. I want to go back to where I was.’ So I started jogging.

(REALM: 31/66; TOFHLA numeracy: 13/17)

Literacy, numeracy, cont.

"…when I very first got the insulin, I had asked the pharmacy about what the sliding scale was for it, and he actually explained it to me. So, now that I'm gonna be taking insulin again I know what the sliding scale is for the insulin. Say like, if it goes over 250 to 300 you only take um... 2 units, which is only a very small amount, but if it goes over 300 to 400, or even higher than that, you have to take anywhere between 4 and 8 units."

Cultural beliefs and health literacy

- Language contains embedded beliefs about chronology, causation, agency
- Cultural norms, e.g., deference
- Cultural beliefs are part of internally consistent ethno-medical systems
  - May or may not incorporate biomedical information
  - Hierarchies of resort

Conclusions

- Education is an important contributor to health literacy, but **functional** health literacy exceeds years of education, literacy or numeracy skills
- Multimethod and qualitative research may have greater explanatory power for some quantitative findings
- Cultural beliefs affect health knowledge and behaviors

For more information:

Contact shaws@email.arizona.edu

or visit

anthropology.arizona.edu/culturehealthliteracy/

Recommendations

- Couple instrument development with focus groups/formative research
- Simple translation may not be adequate for diverse groups: Follow SAHLSA instrument development procedure to develop Vietnamese/other health literacy scales